Special Issue

Technologies and Applications of Terahertz Metamaterials

Message from the Guest Editors

Terahertz (THz) waves have exhibited promising applications in imaging, sensing, and communications, especially for the next generation of wireless communications due to the large bandwidth and abundant spectral resources. The general THz applications strongly rely on efficient modulators for free-space or on-chip applications. With limited natural materials that have a high-efficiency response in the terahertz band, there are many difficulties in developing terahertz-functional devices and practical applications. Metamaterials (MTMs) are artificial composite materials with arrays of strongly scattering subwavelength "meta-atoms", which have exhibited extraordinary performance to control free-space and on-chip wave propagation. Recently, THz MTMs have become a focus of active research in many fields, such as communication, radar, imaging, and biosensing. This Special Issue will present a collection of frontier studies, technologies, reviews, and perspectives on this rapidly evolving area and aims to address the key challenges and requirements across a broad range of THz MTMs and their applications.

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